CHRISTOPHER D. HARVEY

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EDUCATION

2008	Ph.D.	Watson School of Biological Sciences, Cold Spring Harbor Laboratory, NY
2003	B.S.	Vanderbilt University, Nashville, TN Majors in Biomedical Engineering and Molecular/Cellular Biology

RESEARCH EXPERIENCE (reverse chronological)

2018 -	Associate Professor Department of Neurobiology, Harvard Medical School, Boston, MA
2012 - 2018	Assistant Professor Department of Neurobiology, Harvard Medical School, Boston, MA
2008-2011	Postdoctoral Training Advisor: David Tank, Princeton University, Princeton, NJ
2003-2008	Doctoral Training Advisor: Karel Svoboda, Cold Spring Harbor Laboratory and Janelia Research Campus/HHMI

SELECTED HONORS, AWARDS, AND REVIEW ACTIVITIES (reverse chronological)

2018	Society for Neuroscience Young Investigator Award
2015-2020	Biobehavioral Research Award for Innovative New Scientists (BRAINS), NIMH/NIH
2014-2016	NARSAD Young Investigator Award
2014-2015	Armenise-Harvard Foundation Award
2013-2016	Searle Scholars Award
2013-2017	New York Stem Cell Foundation Robertson Neuroscience Investigator
2012-2014	Alfred P. Sloan Research Fellowship
2012-2016	Burroughs Wellcome Fund Career Award at the Scientific Interface
2010	Larry Katz Memorial Lecture, Cold Spring Harbor Laboratory
2009-2011	Helen Hay Whitney Postdoctoral Fellowship
2003-2008	David and Fanny Luke Predoctoral Fellowship
2002	Pfizer Undergraduate Research Fellowship

Ad hoc reviewer for Nature, Science, Cell, Nature Neuroscience, Neuron, eLife, PNAS, Journal of Neuroscience, Current Biology

PEER-REVIEWED PUBLICATIONS (reverse chronological)

1. Chettih, S.N. and **Harvey, C.D.** Single-neuron perturbations reveal feature-specific competition in V1. *Nature*. 567, 334-340 (2019).
2. Minderer, M., Brown, K.D., **Harvey, C.D.** The spatial structure of neural encoding in mouse posterior cortex during navigation. *Neuron*. 102, 232-248 (2019).
3. Safaai, H., Onken, A., **Harvey, C.D.**, Panzeri, S. Information estimation using non-parametric copulas. *Physical Review E*. 98, 201811 (2018).
4. Jackman, S.L., Chen, C.H., Chettih, S.N., Neufeld, S.Q., Drew, I.R., Agba, C.K., Flaquer, I., Stefano, A.N., Kennedy, T.J., Belinsky, J.E., Roberston, K., Beron, C.C., Sabatini, B.L., **Harvey, C.D.**, Regehr, W.G. Silk fibroin films facilitate single-step targeted expression of optogenetic proteins. *Cell Reports*. 22, 3351-3361 (2018).
5. Driscoll, L.N., Pettit, N.L., Minderer, M., Chettih, S.N., **Harvey, C.D.** Dynamic reorganization of neuronal activity patterns in parietal cortex. *Cell*. 170, 986-999 (2017).
6. Runyan, C.A., Piasini, E., Panzeri, S., **Harvey, C.D.** Distinct timescales of population coding across cortex. *Nature*. 548, 92-96 (2017).
7. Panzeri, S., **Harvey, C.D.**, Piasini, E., Latham, P.E., Fellin, T. Cracking the neural code for sensory perception by combining statistics, intervention, and behavior. *Neuron*. 93, 491-507 (2017).
8. Morcos, A.S. and **Harvey, C.D.** History-dependent variability in population dynamics during evidence accumulation in cortex. *Nature Neurosci.* 19, 1672-1681 (2016).
9. Rajan, K., **Harvey, C.D.**, Tank, D.W. Recurrent network models of sequence generation and memory. *Neuron*. 90, 128-142 (2016).
10. **Harvey, C.D.**, Coen, P., Tank, D.W. Choice-specific sequences in parietal cortex during a virtual-navigation decision task. *Nature*. 484, 62-68 (2012).
11. Dombeck, D.A., **Harvey, C.D.**, Tian, L., Looger, L.L., Tank, D.W. Functional imaging of hippocampal place cells at cellular resolution during virtual navigation. *Nature Neurosci*. 13, 1433-1440 (2010).
12. **Harvey, C.D.**, Collman, F., Dombeck, D.A., Tank, D.W. Intracellular dynamics of hippocampal place cells during virtual navigation. *Nature*. 461, 941-946 (2009).
13. **Harvey, C.D.**, Ehrhardt, A.G., Cellulare, C., Zhong, H., Yasuda, R., Davis R.J., Svoboda, K. A genetically-encoded fluorescent sensor of ERK activity. *Proc Natl Acad Sci*. 105, 19264-19269 (2008).
14. **Harvey, C.D.**, Yasuda, R., Zhong, H., Svoboda, K. The spread of Ras activity triggered by activation of a single dendritic spine. *Science*. 321, 136-140 (2008).
15. **Harvey, C.D.** and Svoboda, K. Locally dynamic synaptic learning rules in pyramidal neuron dendrites. *Nature*. 450, 1195-1200 (2007).

16. Yasuda, R., **Harvey, C.D.**, Zhong, H., Sobczyk, A., van Aelst, L., Svoboda, K. Supersensitive Ras activation in dendrites and spines revealed by two-photon fluorescence lifetime imaging. *Nature Neurosci*. 9, 283-291 (2006).

OTHER PUBLICATIONS

Minderer M. and **Harvey, C.D.** Virtual reality explored: The best of both worlds. *Nature*. 533, 324-325 (2016).

MENTORSHIP

Current	Postdoctoral Fellows:	Charlotte Arlt, Alan Emanuel, Jonathan Green, Shinichiro Kira, Houman Safaai, Sofia Soares, Daniel Wilson
	Graduate Students:	James Bohnslav, Selmaan Chettih, Anna Jaffe, Noah Pettit, Shih-Yi Tseng
	Research Assistant:	Roberto Barroso-Luque
Former	Postdoctoral Fellows:	Caroline Runyan (now Assistant Professor, University of Pittsburgh) Alice Wang (now Research Lead Scientist at Spotify)
	Graduate Students:	Laura Driscoll (now Postdoc, Stanford University) Matthias Minderer (now AI resident at Google Brain) Ari Morcos (now Research Scientist at DeepMind)

FUNDING

Current	NINDS / NIH	R01 NS089521	2015-2020
	Parietal cortex networks for sensorimotor processing during navigation		
	NIMH / NIH	R01 MH107620	2015-2020
	New approaches to understand neuronal microcircuit dynamics for working memory		
	NIH BRAIN Initiative	R01 NS108410	2018-2023
	Studying perceptual decision-making across cortex by combining population imaging, connectomics, and computational modeling		
	Human Frontier Science Program		2017-2020
	Building a theory of shifting representations in the mammalian brain		
Past	NYSCF Robertson Neuroscience Investigator		2013-2017
	Optical dissection of mouse decision-making circuits in virtual reality		
	Burroughs Wellcome Fund Career Award at the Scientific Interface		2012-2016
	Dissecting the neural circuit mechanisms underlying decision-making in mice		
	Searle Scholars Award		2013-2016
	Plasticity of neural circuit dynamics in the mouse cortex during learning		
	Simons Foundation Autism Research Initiative		2014-2016
	Optical imaging of circuit dynamics in autism models in virtual reality		

NARSAD Brain and Behavior Research 2014-2016
Imaging information flow in cortical circuits during cognitive processing

Helen Hay Whitney Postdoctoral Fellowship 2008-2011